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THE RELATIONSHIP BETWEEN COPING STYLE AND ACTUAL COPING STRATEGIES USED DURING CARDIAC CATHETERIZATION

BY

BARBARA L. SPADY

A THESIS SUBMITTED TO THE FACULTY OF GRADUATE STUDIES
AND RESEARCH IN PARTIAL FULFILLMENT OF THE
REQUIREMENTS FOR THE DEGREE OF
MASTER OF NURSING

FACULTY OF NURSING

EDMONTON, ALBERTA

(FALL, 1993)

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ISBN 0-315-88253-0

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DEGREE: Master of Nursing

YEAR THIS DEGREE GRANTED: Fall, 1993

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THE UNDERSIGNED CERTIFY THEY HAVE READ, AND RECOMMEND TO THE FACULTY OF GRADUATE STUDIES AND RESEARCH FOR ACCEPTANCE, A THESIS ENTITLED THE RELATIONSHIP BETWEEN COPING STYLE AND ACTUAL COPING STRATEGIES USED DURING CARDIAC CATHETERIZATION, SUBMITTED BY BARBARA L. SPADY IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE DEGREE OF MASTER OF NURSING.

Dr. Terry Davis, Supervisor

Dr. Tom Maguire

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Dr. Linda Reutter

Date: June 10, 1993

ABSTRACT

The purpose of this study was to test the construct validity of the Miller Behavioral Style Scale (MBSS) scores and Miller's Monitoring and Blunting hypothesis by determining the extent to which subject' MBSS scores are related to actual information seeking and information avoiding strategies used by individuals undergoing cardiac catheterization (CC) and by identifying contextual factors in the CC setting relevant to Miller's hypothesis.

The following data on twenty seven subjects selected from a larger study were used: MBSS scores, post CC interview data, researcher notes, and subjects' comments. Coping strategies were coded into monitoring, distraction, and other strategies.

All subjects monitored at least once and only five subjects used distraction strategies. Twenty one subjects used other strategies in addition to monitoring or distraction. Using Chi-square analysis no significant difference was found between coping style using each of the MBSS monitoring and blunting subscales and actual monitoring and distraction strategies used.

Interviews were also analyzed for appraisals of threat and situational factors relevant to Miller's hypothesis. Appraisals of threat were related to uncertainty, either general uncertainty or uncertainty related to a specific situation. Situational factors characteristic of the CC which did not support distraction included intensity, a rapidly changing situation, information given to subjects about the nature and probability of risk, instructions given during the procedure, imminence of the event and the nature of the CC.

The construct validity of Miller's hypothesis and the MBSS scores was not supported. Factors affecting lack of construct validity included lack of clarity and precision of the constuct and the hypothesis, lack of representativeness and relevance in the CC setting, and differences between laboratory and clinical situations.

ACKNOWLEDGEMENTS

I thank Dr. Terry Davis, my supervisor, not only for permission to use her research data, but especially for her continuing support and encouragement throughout the MN program and for providing an environment for independence and thoroughness of thought and decision making. I thank Dr. Tom Maguire for his encouragement, his availability for discussion and his positive feedback and Carolyn Ross for her generous sharing of articles, helpful discussion, and her assistance in coding.

I thank my family for making it all worthwhile and especially my husband Don, for his support, patience and many hours of discussion and assistance.

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CHAPTER I

INTRODUCTION

At the Walter Mackenzie Health Sciences Center (WMC), in Edmonton, Alberta, approximately 2000 individuals per year undergo cardiac catheterization (CC), an invasive medical procedure used to diagnose and treat cardiac conditions. This procedure carries with it risks, some of which are life-threatening (Finesilver, 1978; Klinke, Kubac, Talibi, & Lee, 1985). These risks, plus the uncertainty of the what the results will show, the fear of pain, and fear of the unknown are sources of anxiety in individuals undergoing CC (Finesilver, 1980).

The occurrence of anxiety--an unpleasant emotional state associated with stress--during a CC may adversely affect the outcome. Physiological changes associated with anxiety, such as increased heart rate and raised blood pressure, increase the demand on the heart and may increase the length and difficulty of the procedure (Finesilver, 1978).

To deal with anxiety an individual uses various coping strategies. These strategies play an important role in how an individual responds to stressful situations and sometimes to the immediate outcome of that situation. It is theorized that by helping individuals use coping strategies to lower their anxiety, there would be a better clinical outcome; however, thus far, research results have been inconsistent.

Research into preparatory interventions designed to reduce anxiety by providing patients with relevant information (Kendall, Williams, Pechacek, Shisslak, & Herzoff, 1979; Watkins, Weaver, & Olegaard, 1986) and training of coping skills (Anderson & Masur, 1989; Frenn, Fehring & Kartes, 1986; Rice, Caldwell, Butler, & Robinson, 1986; Tan & Poser, 1982) during CC has shown

inconsistent results. Results from some research suggests that large amounts of information may actually exacerbate distress in some patients (Miller, 1980); other results have suggested that matching individual coping style with preparatory information may reduce anxiety during CC (Watkins et al., 1986).

Nursing interventions that try to reduce anxiety by modifying cognitive and behavioral responses to the CC require information about how an individual is likely to react to stress before actually entering a stressful situation. One way to determine this is to measure an individual's preferred coping strategies when faced with various situations. The Miller Behavioral Style Scale (MBSS) is one scale that has been used to measure coping style; however, support for construct validity of the scale in various clinical situations is inconsistent and the usefulness of the MBSS in planning preparatory information for patients is undetermined.

Purpose of the Study

The purpose of this study is to test the construct validity of the MBSS by (a) determining the extent to which subjects' self-reports of their information seeking/avoiding coping styles relates to their actual reported coping strategies during a cardiac catheterization, and (b) identifying the contextual factors relevant to Miller's hypothesis that affect the construct validity of MBSS scores in the CC setting.

Construct Validity

Traditionally, test validity has been divided into three types: construct validity, criterion-related validity, and content validity. Construct validity was concerned with the extent to which the tool measured the construct it was designed to measure. Over the years the concept of validity has evolved from one which classified types of validity as separate entities to a more unified view of validity with construct validity as the foundation for validity inquiry (Messick, 1989; Moss, 1992). Many validity theorists accept that construct validity subsumes construct, content, and criterion-related evidence as well as an appraisal of the implications and social consequences of test interpretation and use (Messick, 1989).

The assessment of validity is a continuing process of scientific inquiry, both quantitative and qualitative, by which we determine the degree of confidence we can place in the inferences we make about a person based on a test score (Messick, 1989; Streiner & Norman, 1989). This judgment is based on empirical evidence and theoretical rationales and requires an evaluation of the evidence and consequences of both test interpretation and test use (Messick, 1989).

Sources of evidence of validity include an appraisal of the relevance and representativeness of the test content in relation to the content of the domain of reference, individual response to the test items, the internal structure of test responses, relationships of test scores to other variables, differences in test processes under different conditions, and the implications and social consequences of interpretation and use of the test scores (Messick, 1989). In the literature review that follows the sources of evidence will be examined in order to assess the support for construct validity of the MBSS within the context of Miller's hypothesis.

CHAPTER II

LITERATURE REVIEW

The following will first provide an overview of the cognitive theory of stress and coping as proposed by Richard Lazarus, and then will examine the construct "coping style" in relation to studies in stress and coping. It will then focus more specifically on Miller's Monitoring and Blunting Hypothesis, describe the scale devised by Miller to assess monitoring and blunting, and then examine the following areas to evaluate support for the construct validity of the MBSS: the clarity and consistency of the construct coping style and the changes in conceptualization of the concept; the congruence of the scoring system with the construct; content representativeness of the MBSS; the interpretation of test scores; and the empirical support for the expected relations implied in the theory.

Lazarus's Theory of Stress, Appraisal and Coping

Lazarus defines stress as a "particular relationship between person and the environment that is appraised by the person as taxing or exceeding his or her resources and endangering his or her well-being" (Lazarus & Folkman, 1984, p. 19). His theory of stress, appraisal and coping identifies two processes, cognitive appraisal and coping, as critical mediators of a stressful encounter and its short-term and long-term outcomes. The theory is both relational (or transactional) and process oriented. It is process oriented to the extent that it refers to a dynamic multidirectional relationship between appraisal, coping, and emotion. It is relational in that it involves a transaction--a person-situation relationship--that transcends the individual person and situation variables to form a new concept different than the sum of its parts (Lazarus & Launier, 1978). Although appraisal is

influenced by person factors such as commitments and beliefs, and situation factors such as imminence, it is the appraisal of the person-situation relationship that is central to the theory.

Cognitive appraisal is a process by which an individual evaluates whether a particular encounter with a stressor is relevant to his or her well-being. In primary appraisal the person evaluates whether something of relevance to his or her well-being has occurred. A stressful response will occur only if the individual has a personal stake in the encounter. In secondary appraisal the person evaluates his or her coping options and resources and whether and how any action might affect his or her well-being. Primary and secondary appraisals converge to determine to what extent the encounter--the person-environment transaction--is significant to one's well-being. They are functionally interdependent processes which may occur simultaneously and in either order (Lazarus, 1991).

Stress appraisals include harm/loss, threat, and challenge. In harm or loss appraisals some damage has already occurred, but threat is always present because of negative implications for the future. Threat appraisals concern harms or losses that have not yet occurred but are anticipated and are associated with emotions such as anxiety and anger. Challenge appraisals focus on the potential for gain or growth and are associated with emotions such as excitement (Lazarus & Folkman, 1984). Both threat and challenge appraisals can occur in the same situation, especially under conditions of maximum ambiguity, shifting as an encounter unfolds (Folkman & Lazarus, 1985; Lazarus & Folkman, 1984).

Coping is defined as "constantly changing cognitive and behavioral efforts to manage specific external and/or internal demands that are appraised as taxing or

exceeding the resources of the person" (Lazarus & Folkman, 1984, p. 141). Coping is a function of continuous appraisals and reappraisals of the shifting person-environment relationship. Lazarus describes two functions of coping: emotion-focused and problem-focused coping. Emotion-focused coping is directed at lessening emotional distress and includes coping strategies such as avoidance, wishful thinking and minimizing the threat. Problem-focused coping is directed at managing the problem causing the distress and includes strategies such as defining the problem, and making and carrying out a plan of action. Short term outcomes of the encounter consist of an emotional state that reflects the judgment by an individual as to how successfully desired goals were achieved and how satisfied the person is with his or her performance. Long term outcomes consist of the cumulative effects of emotional patterns on social functioning, subjective well-being, and somatic health (Lazarus, 1991).

Coping Style

Approach and avoidance are the two main modes of coping with threatening events (Averill & Rosenn, 1972; Cohen & Lazarus, 1973; Koloupek, White, & Wong, 1984; Krohne, 1989; Miller, 1987; Roth & Cohen, 1986). An approach strategy, or vigilance, is oriented towards the threat; the purpose is to gain control over the threat relevant aspects of a situation (Krohne, 1989; Roth & Cohen, 1986). An avoidance strategy is oriented away from the threat; it's purpose is to reduce the arousal associated with a threatening event. Thus for example, a patient having a cardiac catheterization may use an avoidance strategy by counting the tiles on the ceiling, or trying to imagine him or herself on a warm beach or will use an approach strategy of asking questions or watching the monitor for information.

Avoidant strategies generally seem more effective in reducing stress and anxiety and approach strategies allow for the possibility of noticing and taking action in potentially controllable situations (Roth & Cohen, 1986).

There may be some advantages to the use of avoidant or approach strategies. Generally avoidance strategies are more effective when outcome measures are immediate or short term and attention strategies more effective when outcome measures are long term (Kaloupek et al., 1984; Mullen & Suls, 1982; Suls & Fletcher, 1985). Cohen and Lazarus (1973) demonstrated in surgical patients that avoidant coping and middle groups recovered faster than vigilant groups (days in hospital and minor complications). The middle group, which was the largest group, 61% of the total, consisted of those subjects who could not be classified into avoidant or vigilant groups. Studies conducted in stressful health care settings have indicated that effectiveness in reducing stress is enhanced when interventions are congruent with preferred coping strategies (Auerbach, 1989; Carver, Scheier, & Weintraub, 1989; Martelli & Auerbach, 1987; Shipley, Butt, Horwitz & Farbry, 1973).

Although there is agreement on the use by individuals of approach and avoidance strategies, controversy exists over whether individuals have a predisposition to particular coping styles that determine consistency in coping over time and situation (Carver et al., 1989; Krohne, 1990). Research supporting the idea of consistency in coping strategies based on an individual's predisposition towards vigilance or avoidance is supported by laboratory research which has centered on the predictability and controllability of an aversive event such as electric shock and cold pressor test on stress. Results have demonstrated behavioral

preference for vigilance in spite of not being able to avoid a shock and avoidance even when the shock was preventable (Averill, O'Brien & DeWitt, 1977; Averill & Rosenn, 1972; Miller, 1979b).

If there are individual preferences in coping, it would be desirable to be able to measure these preferences. Attempts to do so, however, have been unsuccessful. Researchers have attempted to measure individual dispositional preferences in coping. Trait measures such as the Repression-Sensitization Scale have been poor predictors of coping processes (Averill & Rosenn, 1972; Cohen & Lazarus, 1973; Kaloupek et al., 1984) and do not reflect the multidimensional nature of coping in real-life situations (Lazarus and Folkman, 1984; Miller and Mangan, 1983). Derived from defense theory, trait measures refer to personality attributes, and are based on the assumption that people are behaviorally, attitudinally, and cognitively consistent across situations. One reason for their lack of success may be because they don't take into account the situational context of coping (Schultheis, Peterson, & Selby, 1987).

Since the 1980's most of the coping research has focused on developing subjective, self-report coping measures (Endler & Parker, 1990). Few of the coping scales have been derived from comprehensive theory (Endler & Parker, 1990) and most of the existing scales have methodological weaknesses: relatively low reliabilities, unstable or unsubstantiated factor structure, inadequate construct validity, and lack of empirical validation of the coping subscales (Carver et al., 1989; Endler & Parker, 1990; Krohne, 1990).

Miller's Monitoring and Blunting Hypothesis

Miller's view of coping is congruent with that of Lazarus to the extent that Miller views coping as a process determined by an interaction between situational and individual factors. In addition, she also postulates that individuals have particular coping styles and these styles influence the coping strategies used by an individual in a threatening event (Miller, 1980). It is different from traditional trait approaches in that it takes situational factors into account.

Miller refers to coping style as a trait (Miller, 1979b) or personal or individual disposition to seek out information and distract from (Miller, 1989a, Miller & Green, 1985; Miller & Mangan, 1983) or to cognitively avoid and transform threatening cues (Miller, 1989b).

Miller's hypothesis is an extension of the safety-signal theory based on animal research which states that signaled shock (predictability) is preferred because the absence of the signal means safety and therefore the opportunity to relax in between signals (Averill & Rosenn, 1972; Miller,1980). According to Miller, the safety signal theory fails to distinguish between the physical and psychological presence of danger signals; it does not consider how an individual psychologically transforms a physical stimulus (Miller, 1980). Miller (1980) suggests that some individuals prefer unpredictability and have developed avoidance strategies, such as distraction, to remove themselves psychologically from the objectively present danger signal and thereby reduce anxiety. Distraction should be easier when the aversive event is unpredictable, uncontrollable, or of low intensity and difficult or impossible when the aversive event is intense, that is, when it is high probability, high level, long duration, or imminent (Miller, 1980; Miller & Grant, 1979c).

Predictability should be chosen under conditions that make distraction difficult (Miller, 1980, 1981; Miller & Grant, 1979c).

Monitoring and blunting are the terms Miller uses to describe the two principal modes she has identified that individuals use to cope with aversive events. These are similar to the general classification of approach and avoidance strategies. Monitoring is defined as "the extent to which the individual is alert for and sensitized to threat-relevant information" (Miller, 1989d, p. 7). Whether or not Miller views monitoring as a coping strategy is ambiguous. It is both included as a coping strategy (Miller, 1989a, 1989b) and excluded (Miller, 1989b) from Miller's definition of coping as "the regulation of stressful emotions via attention deployment and the modulation of internal arousal" (Miller, 1989b, p. 3). Miller compares this definition of coping with that of Lazarus' emotion-focused coping.

Blunting is defined as "the extent to which the individual cognitively avoids or transforms threat-relevant information" (Miller, 1989d, p. 7); cognitive transformation is defined by Miller as selectively filtering information (Miller, 1989d; Miller, Combs, & Stoddard, 1989; Miller & Green, 1985). Miller suggests that although all individuals have monitoring skills, they vary in their ability to apply blunting strategies.

Blunting strategies are defined as "those strategies which remove people psychologically from danger signals" (Miller, 1980, p. 147); they help to blunt the psychological impact of physically present danger signals. Types of blunting strategies include distraction, self-relaxation, reinterpretation, intellectualizing, detachment, and denial (Miller, 1980; Miller & Green, 1985).

Distraction, defined as "the direction of attention away from threatening

cues" (Miller, 1989a, p. 15) is a key component of Miller's hypothesis as it is the "most easily induced and operationalized" (Miller, 1979b, p. 572). It suppresses all thoughts about an impending stressful event (Miller & Green, 1985). Blunting strategies other than distraction are less conveniently operationalizable and measurable than distraction but may combine some degree of reduced arousal with the continued processing of external threat-relevant information (Miller & Green, 1985); according to Miller, they may have the advantage of discriminating changes in the external situation and may be useful in situations which may be subject to change (Miller, 1980).

According to Miller, situational factors such as predictability, controllability, and intensity interact with coping style to affect choice of coping strategies. Predictability means that one can know something about the event while controllability means that one can do something about an aversive event. The monitoring and blunting hypothesis explains the conditions under which predictability (or information) is preferred and when it is stress-reducing.

When an threatening event is controllable, monitoring is the main coping mode as it enables one to take action to control the event. When an aversive event is uncontrollable, information will be arousal inducing as it forces the individual into the psychological presence of the danger that can't be avoided (Miller, 1989d). To the extent that an individual monitors the negative aspects of the event, arousal remains high in aversive situations and is reduced when one psychologically can blunt the sources of danger. Miller hypothesizes that in uncontrollable situations blunters should consistently choose to avoid or blunt danger signals; they prefer unpredictability and should opt for distraction even when environmental conditions

do not support distraction (Miller, 1981). Monitors should consistently prefer to seek information as it provides them with external cues that reduce uncertainty; they prefer predictability. She also predicts that individuals forced to use their non-preferred mode should show higher arousal than those using their preferred mode. On the basis of her hypothesis Miller developed the Miller Behavioral Style Scale (MBSS) to identify independently and in advance an individual's informational preference in an uncontrollable threatening event (Miller, 1980).

The Miller Behavioral Style Scale (MBSS)

The MBSS is a self-report instrument designed to assess individual preferences for information and/or distraction in a variety of naturalistic stress situations (Miller, 1987). The scale consists of four hypothetical stress-evoking situations of an uncontrollable nature (see Appendix A). Each situation is followed by eight statements, four representing information-avoiding strategies and four representing information-seeking strategies. Individuals are asked to select those items which represent strategies that they would use in the given situation.

Three measures are derived from the scale. The monitoring measure is the sum of all the items endorsed on the monitoring subscale. Subjects scoring above the mean or median (Miller uses the terms interchangeably) are high monitors, and those scoring below are low monitors (Miller, 1987). The blunting measure is the sum of all the items endorsed on the blunting subscale and subjects are divided into high and low blunters in a similar manner. A third measure, the difference score or the monitor/blunter measure is obtained by subtracting the total number of items endorsed on the blunting subscale from the total number of items endorsed on the monitoring subscale. Subjects are divided into monitors and blunters using a mean

or median split. In earlier research the difference score was predominantly used. However, in later studies the two dimensions were uncorrelated (Miller, 1987; Miller, Brody, & Summerton, 1988) and more recent research treats the two dimensions as independent and separable (Miller, 1989d).

Reliability of the MBSS

Miller reports a test-retest reliability of .72 for the monitoring subscale and .75 for the blunting subscale when measured over a four month period (Miller, 1987). Alpha coefficients for the MBSS range from .75-.79 on the monitoring subscale and .67-.69 on the blunting subscale (Miller, 1987). van Zuuren and Wolfs (1991) report an alpha coefficient for the blunting subscale to be .33.

Evidence of Construct Validity

Changes in Miller's Coping Style Terminology

The terminology used by Miller has evolved over time as the hypothesis has matured, been tested, and revised; this has resulted in some confusion of terms. Monitoring and blunting were initially hypothesized to be two alternate strategies of a single coping dimension (Miller, 1980, 1989a; Miller & Mangan, 1983). Because results of studies found the scores on the monitoring and blunting subscales to be uncorrelated (Miller, 1987), Miller changed the conceptualization of coping style from one of a single underlying dimension to two separate dimensions: an "information-seeking/information-avoiding style" and a "distracting/nondistracting style" (Miller, 1987). This change in terminology is not chronologically consistent, however. In 1989 Miller refers to a single monitor-blunter dimension (Miller, 1989b, 1989c).

Corresponding to the change from one to two separate dimensions, the terms

monitor and blunter changed to high and low monitors (information seekers and avoiders) and high and low blunters (distractor and nondistractor) (Miller, Leinbach, & Brody, 1989). Although "blunting" encompasses both avoiding and transforming threat-relevant information (Miller, 1987; Miller & Mangan, 1983), the term "blunter" is equated with information avoider (Miller & Green, 1985) or distractor (Miller, Leinbach & Brody, 1989). A low monitor (on the monitoring subscale), however, is also referred to as an information avoider (Miller, Leinbach, & Brody, 1989).

The two dimensions are referred to as unique and separable and are referred to as "informational-processing style" (Miller & Birnbaum, 1988), a cognitive informational style (Miller, 1989d), and a cognitive coping style (Miller & Birnbaum, 1988).

In conclusion, because of inconsistency and ambiguity in the definitions of terms used in Miller's hypothesis, clarity and precision are lacking.

Congruency Between MBSS Scoring and Construct

Miller refers to the purpose of the MBSS as a tool to identify independently and in advance those disposed to distract or not distract and to monitor or not monitor for information (Miller, 1980, 1987, 1989d; Miller & Mangan, 1983).

As stated earlier, several scoring systems for the MBSS have been used. Studies using the difference score used both a mean split (Efran, Chorney, Ascher, & Lukens, 1989; Miller & Mangan, 1983; Steketee, Bransfield, Miller, & Foa, 1989; Watkins et al., 1986) and a median split (Phipps & Zinn, 1986; Steptoe & O'Sullivan, 1986). In other studies both scales were employed and used both a mean (Miller, 1987) and median split (Miller, Leinbach, & Brody, 1989) and in

two studies only results using the monitoring subscale were reported (Miller et al., 1988; Miller, Leinbach, & Brody, 1989). While Miller claims the mean and median are equivalent (Miller & Mangan, 1983), she does not provide proof to verify this equivalence. It does imply a normal distribution of the scores. A further problem arising from analysis of the data is the uncertainty that these different scoring systems place individuals in equivalent groups and if not, do they measure the same construct?

Solomon, Mikulincer, and Arad as cited by Miller (1989b) examined the four groups formed by using the two uncorrelated subscales: high monitors/low blunters (HMLB), low monitors/high blunters (LMHB), high monitors/high blunters (HMHB) and low monitors/low blunters (LMLB). However, only two groups: high monitors/low blunters and low monitors/high blunters are addressed by Miller in studies using the MBSS; the other two groups are ignored. Miller does not address this problem. Krohne (1989) has classified individuals into four similar groups based on a similar tool to the MBSS.

Content Representativeness of MBSS Items

Content representativeness is concerned about how well a test represents the domain content of the construct, referred to as the "domain of reference". The domain of reference is the total body of information which the construct is expected to account and about which inferences are to be drawn (Messick, 1989). The test items should be a representative sample of the domain of reference. Knowing what constitutes the domain of reference is essential in guiding the kinds of items chosen for a test and in interpretation of test scores for use in different situations. In order to assess the representativeness of the MBSS items to the construct, coping style,

the facets or dimensions and boundaries of the domain must be understood (Brink & Wood, 1989; Messick, 1989). The domain of reference lacks clarity in Miller's hypothesis.

Miller hypothesizes that in threatening situations people will either monitor or blunt. According to Miller blunting includes not only distraction but other blunting strategies. However, the MBSS only measures distraction because blunting strategies other than distraction are less conveniently measurable (Miller & Green, 1985). According to Messick, "exclusion of certain items from the test on the basis of poor empirical properties or lack of empirical fit to the construct theory, can distort the test's representativeness in covering the construct domain as originally conceived" (1989, p. 43). As a result, in using only distraction, the tool fails to represent fully the construct.

Interpretation of MBSS Scores

In evaluating the degree of support for construct validity of the MBSS it is important to examine how the scores are interpreted; that is, is the interpretation of the scores consistent with the construct that the tool is measuring? Although the only blunting strategy that the MBSS measures is distraction, when interpreting the scores from the MBSS, inferences are made beyond distraction to include the more general term of blunting (Miller, 1989a, 1989b). For example, in discussing interacting effects of information Miller & Mangan (1983) state: "Because blunters prefer to deal with threat by not dealing with it, they show reduced arousal with low information, which allows them to cognitively avoid and transform threat-relevant information" (p. 234). Unfortunately Miller does not present evidence to support the assumption that blunters will use strategies other than distraction.

It is important to examine the implications of generalizing to blunting responses when using only the monitoring subscale. For example, in two studies, examining coping style and health care behaviors in both hypertensive patients (Miller, Leinbach, & Brody, 1989) and patients seeking medical help for acute medical problems (Miller et al. 1988), both the monitoring and blunting subscales were used. The subscales were uncorrelated ($r = .07$) but only the monitoring subscale was used in reporting the results. The implication made in both studies is that subjects grouped as high monitors also scored as low blunters, as illustrated in the following statements: "Given the monitoring nature of hypertensives, relaxation strategies that focus on internal bodily cues (such as biofeedback or deep muscle relaxation) may be better suited to such patients than strategies that demand a greater facility with distraction" (Miller, Leinbach, & Brody, 1989, p. 336) and "Because high monitors cannot or do not choose to avoid threatening information, they seek medical care as the most likely means of reducing their distress" (Miller et al., 1988, p. 146). The problem with this interpretation is the implication that high monitors are also low blunters; however, since the subscales are uncorrelated, approximately 50% of high monitors will also be high blunters. As mentioned earlier, Miller does not comment on this inconsistency.

Discriminative Evidence

The MBSS is unrelated to demographic variables, such as sex, age, race, level of education, or marital status (Miller, 1987; Miller & Mangan, 1983). It is also unrelated to trait measures such as repression-sensitization, trait anxiety, depression, and Type A personality (Miller et al., 1988; Miller & Mangan, 1983) although in 1980 Miller reports a correlation of Byrne's repression/sensitization

dimension with the monitoring subscale ($r = .39$, $p < .05$). Steptoe and O'Sullivan (1986) found that the MBSS correlated with psychiatric disturbance as indexed by the General Health Questionnaire and monitoring correlated with a measure of social class. High monitors/low blunters and low monitors/high blunters do not differ on state measures of anger, anxiety, and depression when not in an aversive situation (Miller, 1989d).

The Effect of Coping Style in Clinical Settings

Studies linking coping style using the MBSS with outcome in a clinical setting have supported the idea of individual differences in coping style. However, the results are inconclusive. There is evidence to suggest monitors experience higher levels of anxiety when faced with threatening events such as amniocentesis (Phipps & Zinn, 1986) and colposcopy (Miller & Mangan, 1983). High monitoring has been associated with more frequent seeking of treatment for medical and stress related problems of hypertensive patients; however, it was inconclusive whether a monitoring mode was a contributing factor to hypertension or whether the hypertensive patient adopted a monitoring mode of coping (Miller, Leinbach, & Brody, 1989). High monitoring scores in female patients seeking medical attention for acute medical problems were associated with a preference for more information about some aspects of their health, but no relationship with coping style was found with desire for information about the diagnosis and seriousness of their medical problem. Steptoe and O'Sullivan (1986) demonstrated that monitors will engage in more health-related seeking behaviors: frequency of breast self-examination was marginally related to coping style and monitors were significantly more likely to undergo annual cervical smears.

Matching Information With Coping Style

Miller predicts that individual differences in coping style may affect individual preference for information in a threatening situation and that monitors will benefit more from information and blunters from distraction (Miller, 1980). There is some evidence to support this hypothesis.

In laboratory research with 85 male psychology students, results were inconclusive in matching coping styles with instructional strategies in a cold pressor task (Efran et al., 1989). It was hypothesized that blunters would benefit more from rational statement instruction and monitors from self-observation (subjects were to concentrate on the sensations they experienced during the cold pressor test). There were no differences in tolerance scores based on coping style and instruction. Blunters who had instruction consistent with their coping style had higher pain thresholds than monitors; the predicted positive relationship of the self-observation strategy for monitors was not supported. It was concluded that there are many differences between clinical situations and laboratory situations; laboratory situations are of short duration and for some subjects not an unavoidable stress but an interesting challenge.

In gynecology patients undergoing colposcopy matching an individual's coping style with an appropriate amount of information reduced level of arousal as measured by pulse rate and subjective distress measures (Miller & Mangen, 1983). There were no interactive effects on behavioral measures or other subjective measures. Pulse rates were unrelated to other stress indices. In coronary patients undergoing cardiac catheterization, monitors receiving high levels of preparatory information showed less physiologic and self-reported arousal throughout the

procedure than those receiving low levels of information; blunters receiving lower levels of information were less aroused than blunters receiving high levels of information (Watkins et al., 1986). Stetekee et al. (1989) found no interaction between coping style and information on anxiety in animal phobics.

A problem in assessing and comparing these studies is that "information" is not well defined. Studies examining the effect of person-by-situation matching have been inconsistent in the types of information used; they have used a variety of informational interventions to test Miller's hypothesis. One reason for these differences may be that the theoretical rationale for type of information best suited to individuals on the basis of coping style is not clear. As a result, amount of information may be confounded by the nature of that information and the method of delivery. For example, procedural information vs. procedural-sensory information (Watkins et al., 1986) changes both the amount and kind of information. Use of audio-slides (Watkins et al., 1986) or verbal and visual preparation (Miller & Mangan, 1983) introduces the variable of method of delivery.

Studies Comparing MBSS Scores With Actual Coping Strategies

Only two studies have examined the relationship of MBSS scores with actual coping strategies. In 1987 Miller examined whether scores using the MBSS could predict actual informational strategies under threat in a laboratory situation. Two experiments were conducted:

1. Thirty subjects were threatened with an electric shock and allowed to choose whether to listen to an auditory channel giving information on the nature and onset of shock or to listen to music on another channel. Using ANOVA for repeated measures, high monitors and low blunters spent significantly more time

listening to the information channel than low monitors and high blunters did. The effect was strongest using scores on the blunting subscale ($p < .001$) and weaker using the monitoring subscale. ($p < .08$). From the article it is not clear whether the subjects fitting into the high monitor group ($n = 14$) and the subjects fitting into the low blunter group ($n = 14$) are the same subjects. It is unlikely that the fit is perfect as the correlation between the two subscales was -.41.

2. Forty subjects were presented with a series of ego-threatening cognitive tasks and allowed to choose whether they wanted information about the quality and speed of their performance. Distraction was not provided as an option. Using ANOVA there was a significant main effect using scores on the monitoring subscale ($p < .001$) and no significant effect using the blunting subscale. Again it is unclear how many subjects fit into both the high monitor/low blunter and low monitor/high blunter groups and conversely how many subjects fit into both high monitor/high blunter and low monitor/low blunter groups. This is not addressed.

Limitations to this study are that the HMHB and LMLB groups were not addressed and that the level of threat was probably low compared to real-life situations. Also, in the second study neither distraction nor perception of control were measured. Nevertheless, it was concluded based on results that the MBSS measure of coping styles appears to be a valid instrument for predicting behavioral strategies in response to both physical and psychological stressors.

Only one study has examined the relationship of MBSS scores to actual coping strategies in a non-laboratory situation (van Zuuren and Wolfs, 1991). Coping strategies were measured by assessing monitoring and blunting responses from subjective written reports of responses to a threatening situation subjects went

through recently in a real life situation. The situations were varied and included poor academic results and problems in finding suitable housing. Measurement of blunting strategies included both distraction and underestimation of the impact of the situation. Blunting following exhaustive monitoring was not counted as blunting and monitoring following exhaustive blunting was not counted as monitoring. Coping style was measured using both monitoring and blunting subscales as well as a 5-point scale for each. No relationship was found between subjective assessment of coping strategies and MBSS scores using both the usual dichotomous and the 5-point scales. In examining the relationship between scores on the MBSS and the Ways of Coping Checklist monitoring was uncorrelated ($p > .05$) with problem focused/help-seeking strategies but correlated using a 5-point scale. Monitoring correlated significantly with wishful thinking/escape using the MBSS and the 5-point scale. Blunting did not correlate with wishful thinking/escape using the MBSS but did correlate significantly using the 5-point scale. Monitoring also correlated with internal locus of control using the Trent Attribution Profile.

At this point the extent to which the MBSS relates to actual coping strategies used in a threatening clinical event has not been researched. The purpose of this study is to test the construct validity of the MBSS scores and Miller's hypothesis. The two sources of evidence that will be examined are: (a) What is the relationship of the MBSS scores to the actual coping strategies used during a CC? and, (b) what are the contextual factors unique to this CC setting and how do these factors affect the construct validity of the MBSS scores in this setting?

CHAPTER III

METHODS

Target Population

The target population consisted of male and female adult patients (18 years of age or older) who experienced a first cardiac catheterization at a large urban teaching hospital, the Walter MacKenzie Health Sciences Center (WMC), between September, 1989 and April, 1991.

Sample Selection

The data for this study were drawn from data collected for a larger study of 145 subjects in which the author was one of three research assistants. Permission for access to the data has been granted by the Principal Investigator, Dr. Terry Davis. Ethical clearance for secondary analysis was obtained from the Hospital and Faculty of Nursing Ethics Committee. Eligibility criteria included: (a) ability to read, write and understand the English language; (b) scheduled for a first CC; (c) free from incapacitating physical or psychological discomfort; and (d) not a member of a health profession. The subjects were drawn largely from two cardiology units at the WMC but also came from inpatients at the Grey Nuns Hospital and the Charles Camsell Hospital in Edmonton (See Appendix B for the consent form).

After obtaining consent, the MBSS was administered and coping style determined on the basis of the monitoring subscale. Subjects scoring 11 or higher were classified as monitors; subjects scoring 10 or lower were classified as blunters. Subjects classified as monitors were then assigned randomly to one of three experimental groups: two intervention groups and one control group. Subjects classified as blunters were assigned in like manner, thus there were six groups in

all. The intervention groups each received a video of a patient undergoing a CC: one group observed a "procedural" video which included a patient's experience going through the CC. The second group viewed a "procedural sensory" video, similar to the "procedural" video but which also included a description of the sensations the patient was likely to experience. The control group received the booklet that patients usually received before the test.

To avoid confounding by intervention the sample for this research project consists of a subset of 27 of the 49 subjects who received the "procedural sensory" video. See Table 1 for demographic data describing these subjects. Sample selection was determined on the following basis. Dividing subjects into groups using a mean division with both monitoring and blunting subscales resulted in four groups: high monitor/low blunter (HMLB), high monitor/high blunter (HMHB), low monitor/high blunter (LMHB), and low monitor/low blunter (LMLB). Subjects with scores at or above the 75th percentile (monitoring scores above 11 and blunting scores above 4) and at or below the 25th percentile (monitoring score below 10 and blunting score below 4) were used for two reasons: (a) to maximize any differences in response (If there are differences in coping style, the differences should be apparent in subjects with more extreme scores rather than with scores close to the mean); (b) to eliminate misclassification resulting from using either a mean or median division (For example, dividing at the mean on the blunting subscale (4.2) resulted in all subjects with a blunting score of 4 being placed in the low blunter group; dividing at the median resulted in approximately half of the subjects with a score of 4 to be placed in the low blunter group and half in the high blunter group). The blunting and monitoring scores had slightly skewed

distributions and dividing at the mean and median did not produce equivalent samples.

TABLE 1: Demographic Data of the 27 Subjects

Coping Style Classification	Subject Age	Gender	Years of Education
High Monitor	66	F	12
Low Blunter	63	M	10
	59	F	10
	69	F	12
High Monitor	62	F	13
High Blunter	68	F	16
	77	F	10
	72	M	4
	60	M	9
	48	M	10
	57	M	11
	51	F	12
Low Monitor	44	M	11
Low Blunter	56	M	7
	65	F	10
	58	M	
	58	M	
	64	M	
	52	M	
	59	F	9
Low Monitor	44	M	12
High Blunter	59	M	
	49	F	9
	68	M	8
	69	F	11
	53	M	11
	67	M	8

Data Collection

The day of the CC the subject was taken to the waiting area outside the CC lab where the nurse researcher waited with the subject from a few minutes to an

hour. At this time the CC staff talked with the subject about what to expect and gave instructions on breathing during the CC. The doctor often obtained written consent at this time. The researcher remained in the CC room with the subject and recorded data at six different times or procedural points (PP) during the CC:

PP1: The subject's groin is washed with a cool solution. This takes place following the transfer of the subject onto a narrow table and before draping begins.

PP2: A local anaesthetic is administered to the groin area following draping.

PP3: The introducer, a sheath through which the catheters are threaded, is inserted. The subject often experiences a sensation of pressure.

PP4: The contrast medium (dye) is inserted. A warm sensation is usually experienced in various areas of the body.

PP5: The Dr. tells the subject the procedure is finished.

PP6: The subject is ready to leave the CC lab following removal of drapes and monitoring equipment.

Immediately following the CC in the recovery bay area a tape-recorded interview was conducted with the subject and later transcribed. The interview was a combination of an open-ended interview and an interview guide. Interviewers were instructed to explore the subject's thoughts and coping responses regarding the six procedural points and probe into appraisals of threat. In each case the sequence was similar (start to finish) but could be modified.

During this time a nurse from the CC lab held pressure on the CC site and monitored the subject's progress. After the subject returned to the ward, the researcher recorded the subject's comments about the experience.

Data Management

For this research project the following data on the 27 subjects from the larger study are used: the MBSS scores, the interview data, researcher notes during the CC, and subject comments before, during, and after the CC.

Transcription of Interviews

The interviews had previously been transcribed verbatim. The researcher listened to the tapes for accuracy of content, making corrections in the transcripts as needed, and for expression and nuances of context, such as long pauses and emphasis of words, marking changes on the transcripts as necessary. Numbering of transcripts was done to reduce researcher bias in coding.

Establishing Coding Method

Following analysis of the theory and discovering a lack of clarity in the terms, the domain of reference, and the hypothesis, the following questions emerged: (a) Should blunting or distraction be measured?; (b) What definitions should be used for the concepts to be measured?; and (c) What are the rules for coding coping strategies?

To answer the above questions it was necessary to devise a method of coding the qualitative data. By coding the qualitative data it was possible to classify the data for use in quantitative analysis to determine if there was a relationship between MBSS scores and actual coping strategies used during a CC.

Coding Categories

A decision was made to have three coding categories, "monitoring", "distraction", and "other strategies". Distraction was separated from other strategies based on the rationale that the MBSS measures only monitoring and

distraction, and the purpose of the MBSS is to identify preference for information or distraction (Miller, 1987).

The "other" category was created for two reasons: (a) to identify all the strategies which are actually used during a CC, and (b) The term blunting is used by Miller both in describing a coping mode and in generalizing when interpreting the results of her studies (Miller & Mangan, 1983). Blunting includes not only distraction but other strategies which remove people psychologically from danger signals (Miller, 1980).

Definition of Terms for Coding Coping Strategies

Monitoring

In order to clarify the meaning of the term "monitoring" within the context of Miller's hypothesis and the domain of reference, the monitoring strategies used in the MBSS were analyzed and categorized. Both behavioral and cognitive strategies were evident (See Table 2). Because monitoring included not only the coping strategies of information seeking but also the appraisal of that information, it was concluded that conceptually within the context of Lazarus's theory of stress and coping, it included both the processes of coping and appraisal.

Distraction

Distraction was classified by Miller as a blunting strategy and defined as "the directing of attention away from threatening cues" (Miller, 1989a, p. 15). A similar process was followed for determining the meaning of the term and the domain of reference (Table 2).

Table 2: Coping Strategies Used in the MBSS

Monitoring Strategies

Behavioral strategies:

1. Asking for information: *I would ask the dentist exactly what he was going to do.*
2. Reading for information: *I would carefully read the information provided about safety features in the airplane and try to make sure I knew where the emergency exits were.*

Cognitive strategies:

1. Focusing on threat-relevant information by observing,listening, and consciously staying alert: *I would watch all of the dentist's movements and listen for the sound of his drill*
2. Wanting information: *I would want the dentist to tell me when I would feel pain*
3. Searching one's memory for information: *I would try to remember any argument or disagreement I might have had with my supervisor that might have lowered his opinion of me*
4. Interpreting information: *I would listen to the engines for unusual sounds and would watch the crew to see if their behavior was out of the ordinary*
5. Evaluating information in terms of potential threat: *I would review the list of my duties of my present job and try to figure out if I had fulfilled them all*, and
6. Evaluating the availability of coping options: *I would make sure I knew where any possible exits were.*

Distraction Strategies

Behavioral strategies:

1. *I would go to the movies to take my mind off of things*

Cognitive strategies

1. Directing attention to other thoughts: *I would do mental puzzles in my mind*
2. Pushing threat relevant thought out of one's mind: *I would push all thoughts of being laid off out of my mind.*

Other Coping Strategies

It is important when coding qualitative data to create enough variables to accommodate the answers being given (Krahn, 1990). Therefore, on both theoretical grounds and methodological grounds a category was created to accommodate coping strategies that did not fit into either monitoring or distraction and was included for the purpose of including data that otherwise would have been missed using only two categories, for example, other blunting strategies.

Scoring rules for coding the transcripts were then devised based on the general categories from the MBSS (See Table 3).

Table 3: Scoring Categories for Interpreting Transcripts

Monitoring:

Self-reported or observed action or self-reported thought that directs attention towards threat-relevant information; includes seeking and scanning for threat relevant cues and information, searching memory for information, and interpreting and evaluating the information in terms of potential harm or loss.

Examples of monitoring strategies:

Asks others for information, gets others perceptions of problem, talks to others about threat

Wanting others to give information, eg. when one would feel pain

Observing, listening, focusing on or alert for threat-relevant cues, information (eg. observing staff behavior, watching monitor for information, alert for sensations)

Analyzing and evaluating information (eg. comparing to what was expected, comparing to past experience, assessing coping options).

Looking for information within own past experience

Anticipating, imagining, wondering, thinking about threat-relevant information

Distraction:

Observed or self-reported action or self-reported thought that attempts to avoid threat-relevant information by directing one's attention away from the threat-relevant information.

Examples of distraction strategies:

Tries to think about something else: pleasant memories, daydreams, or fantasies, how nice it will be when situation is over

Does something to take mind off of things, eg. mental puzzles, small talk with others, carry on as if nothing special was happening

Blanks out or pushes all threat relevant thoughts out of one's mind

Other Coping Strategies:

Observed or self-reported action or self-reported thought other than monitoring and distraction

Devising a Coding Unit

The next decision to make was what to include in a coding unit. A pilot analysis of three transcripts (not included in the sample) and using two coders was done, attempting to identify monitoring, blunting, and other strategies. However, dividing monitoring into categories was not feasible. One reason for the difficulty may be that monitoring includes not only coping strategies but also the process of appraisal. For example, the following excerpt is taken from a subject's account of his thoughts during the needle insertion. The same lines could be divided into one or more strategies depending on what criteria were used: behavioral or cognitive strategies, thinking processes such as evaluating or focusing on, kinds of threat appraisals, or time of occurrence.

"It hurt and I was waiting for it to take effect so that I wouldn't feel it but it wasn't as bad as I thought it was going to be…cause I actually expected it to be worse than that…I just figured it had to hurt more than what it did but you don't go pushing stuff like that in and around and not have some pain there somewhere…I didn't know when it would end cause usually with labour pains you know eventually they're going to end…was it going to last the whole time or…"

To ensure that subjects were reporting on comparable stages of the procedure, the interviews were divided into six coding units based on the six procedural points of the original study and the presence or absence of monitoring, distraction, and other strategies within each unit were identified. Because not all subject information was obtained at the time of a PP but might be in between PP's, each unit included the time frame up to and including the PP. In this way all of the data were included. With this method consistency in the use of strategies across a

procedure could be measured during a time frame that was similar for all subjects. Differences in the use of strategies could be observed between groups of subjects and between procedural points. The occasional response which did not fit into any of the six procedural points was included in a general unit. Adding up the total number of strategies used was not feasible because of variability in the depth of the interviews. Also, although this was the method used in the MBSS, some statements in the MBSS included two different strategies, for example, *"I would listen carefully to the engines for unusual sounds and would watch the crew to see if their behavior was out of the ordinary"*.

Inter-Rater Reliability

A pilot analysis using four interviews not in the sample was conducted. A 93% reliability was obtained. Based on the pilot analysis and the literature an acceptable reliability was 80%. In the coding procedure groups of three interviews were randomly picked and from these the second coder randomly picked one interview to code. A reliability check was completed after each group of three interviews was analyzed.

Interrater reliability based on a percentage agreement of raters to the total number of possible agreements was 96% (see Table 4).

Responses to leading questions were not used.

Table 4: Interrater Reliability*

Procedural Point

		1						2						3					
		Classification						Classification						Classification					
		Mon[1]		Dis		Oth		Mon		Dis		Oth		Mon		Dis		Oth	
	Rater	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2
S	#21	+	+											+	+				
U	#26	+	+	+	+	-	-	+	+									-	-
B	#28	+	+					+	+					+	+				
J	#12	+	+					+	+					+	+				
E	#8	+	+			+	+	+	+			+	+	-	-			+	+
C	#18	+	+			+	+	+	+			+	+	+	+				
T	#1					+	+	+	+	+	+			+	+	+	+		
S	#4	+	+					+	+					-	-				
	#7	+	+					+	+			+	+	+	+			+	+

Procedural Point

		4						5						6					
		Classification						Classification						Classification					
		Mon		Dis		Oth		Mon		Dis		Oth		Mon		Dis		Oth	
	Rater	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2
S	#21	+	+					+	+										
U	#26	+	+																
B	#28	+	+																
J	#12	+	+																
E	#8	+	+																
C	#18	+	+					+	+										
T	#1	+	+					+	+	+	+			+	+				
S	#4	+	+	+	+	-	-												
	#7	+	+					-	-										

* + signs reflect agreement between the two raters 1 and 2 that the coping strategy was found .

- signs reflect disagreement between the two raters 1 and 2 that the coping strategy was found .

a blank reflects agreement that the coping strategy was **not** found.

[1]: Mon: monitor; Dis: distraction; Oth: other

Data Analysis

A combination of methods was used. Quantification of qualitative data for statistical analysis was used to determine if there is a relationship between coping style and actual coping strategies used during a CC. A content analysis was used to enhance the understanding of the subject's experience within the context of the experimental design and to assess congruence with or divergence from Miller's Monitoring and Blunting hypothesis.

Quantitative Analysis

Subject responses were coded. Because responses were not mutually exclusive, and "monitoring" occurred in all subjects in various combinations with "other" and "distraction" strategies, a procedure for using the data in Chi square with mutually exclusive data in each cell was worked out to test Miller's prediction.

The independent variable used in the Chi-square analysis was coping style with two categories (high and low monitors) as determined from the monitoring subscale.

The dependent variable used was coping strategy with two categories: (a) monitoring with distraction and (b) monitoring $\pm$ "other".

A second set of Chi-square analyses was carried out with the same independent variable but with the dependent variable categories being: (a) monitoring only and (b) other or distraction $\pm$ monitoring.

In a similar manner, Chi-square analysis was performed using the high and low scores from the blunting subscale as the independent variable.

In each case, the Chi-square was calculated for procedural points one through four and for the total score across all the procedures. Procedural points

five and six were not analyzed due to insufficient data, the procedure was finished at PP#5 and most subjects felt relief that the procedure was over.

Descriptive statistics summarizing coping strategies were obtained from analysis of the interviews.

Qualitative Analysis

The importance of context in interpretation of scores is increasingly emphasized in validity inquiry. The meaning of test scores may change depending on interactions present in a specific group or setting, thus affecting generalizability of scores across groups and conditions (Messick, 1989; Moss, 1992).

A qualitative analysis was completed to examine coping strategies other than monitoring and distraction and contextual factors in the CC setting which might affect coping responses. Each "other" coping strategy was identified; similar strategies were grouped into categories. I looked for patterns within groups (based on MBSS scores) and differences between groups. I looked for congruency with and divergence from Miller's hypothesis. Threat appraisals were similarly identified and categorized to gain an understanding of coping responses within the context of the coping process. References to the effects of the video and situational characteristics of the CC were identified to determine other factors relevant to Miller's hypothesis which might have affected coping strategies used.

CHAPTER IV

RESULTS

The purpose of this study was to test the construct validity of the MBSS scores and Miller's hypothesis. The two sources of evidence that are examined are: (a) the relationship of the MBSS scores to the actual coping strategies used during a CC, and (b) the contextual factors unique to this CC setting and how these factors interact with coping style to effect the actual coping strategies used during the CC.

The Relationship Between MBSS Scores and Actual Coping Strategies

Actual Coping Strategies used During CC

Subjects were classified according to their MBSS scores as high monitor/low blunter (HMLB), high monitor/high blunter (HMHB), low monitor/low blunter (LMLB) and low monitor/high blunter (LMHB). Table 5 presents the coping strategies used by 27 subjects across six PP's. As can be seen from Table 5, some data are missing. Even so, it is important to note that all 27 subjects monitored at least once during the CC. Twenty four subjects monitored across at least three PP's during the CC. Five subjects used monitoring only. Of these one was a high monitor. Four were low monitors.

Five subjects used distraction but all five also used monitoring at least three times. Of these, four were high blunters and one was a low blunter. Of these four high blunters, two were also high monitors. Two subjects that used distraction used it more than one time. Distraction was never used alone but always in combination with monitoring, which always preceded distraction. Their use of monitoring strategies always exceeded their use of distraction strategies.

TABLE 5: Coping Strategies at Different Procedural Points

Coping Style Classification	PROCEDURE POINT 1	2	3	4	5	6	TOTAL M	D	O
High Monitor Low Blunter	M/O*	O	M/O	X	M/O		3	-	4
	X	M/O	M/O	M	M		4	-	2
	M/O	M	M/O	M/O			4	-	3
	M/O	O	M	M	M		4	-	2
High Monitor High Blunter	M	M	M/O	M	M	M	6	-	1
	M/O	O	M/O	M		O	3	-	4
	M/O	M/O	M/O	M			4	-	3
	M/D/O	M/O	M	M			4	1	2
	O	O	M			X	1	-	2
	M		M	M	M		4	-	-
	M/O	M	M	M			4	-	1
	M/D	M		M			3	1	-
Low Monitor Low Blunter	X**	M	X	M	M	X	3	-	1
	M	M	M	M			4	-	-
	M/D	M/D	M/D	M/O	M		5	3	1
	M	M/O		M		X	3	-	1
		M	M	M		X	3	-	-
	M/O	M	M	M			4	-	1
	M	M/O	M/O	M			4	-	2
	O			M/O	M/O		2	-	3
Low Monitor High Blunter	O	M/D	M/D	M	M/D	M	5	3	1
	M	M	M	M/D/O	M		5	1	1
	M/O	M	M	M			4	-	1
	O	M	O	M			2	-	2
	M	M/O	M	M			4	-	1
	M/O	M/O	M	M	M		5	-	2
	M	M	M	M			4	-	-

* M: Monitoring D: Distraction O: Other X: No information available
Blank Response: Coping strategy unidentified (Leading questions, subject forgot, relief at being finished)

** This individual also used an "other" strategy which was a general comment and did not fit any specific procedural point.

The following excerpt at PP#3 illustrates the use of distraction following monitoring.

LMHB *"When the pressure came on I was wondering how far it was going to go--about what distance it was going to, whether it was going to last a minute or two minutes or five minutes or whatever, how much pain was going to be induced...I just put my thoughts on something different, went into space, just thinking about something different, not even thinking about what's happening."*

Twenty one out of 27 subjects used coping strategies other than monitoring or distraction. Although "other" strategies were used at all procedural points, their incidence decreased progressively from PP#1 to PP#6. The use of pure monitoring (without distraction or other) strategies increased progressively from PP#1 to PP#4.

Other Strategies

Other strategies used by 21 out of 27 subjects were grouped into the following categories: self-relaxation, positive reappraisal, acceptance, confidence in staff, joking, prayer, wishing and hoping. The numbers of subjects who used each strategy and examples of subject's comments are below.

Self-Relaxation: [1HMHB, 3LMHB, 2LMLB]

Individuals attempted to keep calm or relax either by talking to themselves or by using a relaxing technique.

LM/HB: *"What I was trying to do there was to be calm, breathe and breathe regularly, it's one thing that you hear people, when they give you (?) and that they hold their breath and stuff like that and that's one thing I thought, well I'll just breathe normally and maybe make things more easy for myself by doing that you know...try to relax as much as possible."*

Positive Reappraisal: [2HMHB, 1LMHB]

Individuals reappraised a situation by changing the meaning in a positive way.

HM/HB: *"I just thought well it's going great and if it's going to continue it will be really easy."*

Acceptance: [3HMLB, 2HMHB, 3LMHB, 2LMLB]

HM/LB: *"I don't know you just make up your mind it's going to happen. You're going through with it and you have to go through with it and this is a part of it."*

Confidence in Staff: [1HMLB, 4HMHB, 1LMHB, 3LMLB]

Individuals expressed a confidence in the Doctor and or the staff.

HM/HB: *"I just feel well they're doing what they can, you know. They know what they're doing. Whatever's going to happen in between we'll get through it."*

Joking: [2HMHB]

Jokes were initiated by the subject with the staff.

HM/HB: *"Joking is my way of coping with things, the serious things. You try to make light of it. Six years ago I had a heart attack and I responded the same way by using humour, making light of it. It helps. It helps me."*

Prayer: [2HMLB, 1LMHB]

HM/LB: *"Well, I was praying a little bit, let somebody else bigger worry about it."*

Wishing: [1HMLB, 1LMHB]

HM/LB: *"I was just a little bit anxious wishing that everything would go okay."*

Hoping: [1HMLB, 1HMHB, 2LMHB, 2LMLB]

HM/HB: *"They couldn't do anything now and hopefully it will be better next time. I can always live in hope."*

Categories were formed based on subject's words, trying to retain the essence of the words rather than put an interpretation on them. For example, one could interpret joking as denial (depending on one's definition of denial). However, without further probing into comments, interpretation is difficult.

One difficulty of classifying strategies is that different researchers classify strategies differently. Miller includes distraction, reinterpretation, denial, intellectualization, self-relaxation and detachment as blunting strategies, but does not discuss them in detail (Miller, 1980; Miller & Green, 1985). However, she also states that relaxation techniques can be on a monitoring/blunting continuum depending on attention to bodily cues. What is apparent is that individuals not only used monitoring and distraction but a range of different strategies and that the strategies used by individuals varied across the situation. This is consistent with findings by Folkman and Lazarus (1985) who found that subjects used on average six to seven types of coping at each of three stages over the course of a college exam.

Appraisals of threat

To interpret the use of different kinds of coping strategies during the CC, it is important to understand from the subject's perspective what was threatening to them. Twenty five out of twenty seven subjects expressed at least one appraisal of threat during the procedure. The lack of reported threat appraisals for two subjects did not necessarily mean that no threat appraisal occurred; for example, one of the subjects cried during the interview when expressing relief with the results. Both subjects expressed positive thoughts about the procedure.

HMHB: *"Well if it's all going to go like this, well it's going to be great."*

HMHB: *"I had the feeling everything was going to go good."*

The two subjects used both monitoring and other strategies: one also used a distraction strategy.

Although most subjects reported threat appraisals at some point during the CC, not all appraisals were threat appraisals; they varied over the course of the CC. For example, the following comment was made at PP#1:

HMHB *"Well, I don't know, excited and I was also happy at the same time, also being glad that it was being done."*

Most subjects expressed relief at PP#5 and PP#6 that the procedure was over.

Threat appraisals were grouped under the following categories:

General Uncertainty about Nature of Event: [3HMLB,4LMLB]

HMHB: *"You're a little tense when you first go in cause you don't really know, you've never been through it before, all you know is what people tell you."*

Uncertainty about possible risks: [3HMLB,3HMHB,1LMHB]

HMLB: *"I'm scared of the unknown more than anything…what might happen you know, as I said complications and things like that can happen. Well I got scared last night when the doctor came and says there's complications, you know, second thought you can have a stroke, you can die…but you know that was in my mind it could be me."*

Uncertainty about Results: [2HMLB,1HMHB,5LMHB,2LMLB]

HMLB: *"The worst part is NOT knowing what the score is and be wondering whether something else could be done or whatever."*

Uncertainty about Meaning of Cue: [1HMLB,1LMHB,7LMLB]

This occurred when something happened that the subjects did not expect and they

did not know how to interpret it.

LMLB: *I thought it gets warm only in the body as such and where it got warm the first time was in the mouth so I thought there was something funny so I was a little bit more alert than I should have been and I figured it comes there from underneath so I was not prepared for the right side…if you know what should happen and something different comes out of it you get a different defense mechanism."*

Uncertainty Related to the Dye: [2HMHB,4LMHB,3LMLB]

HMHB: *"Here you go back to the unknown. I didn't know how, how hot it was going to get and how long it was going to last. I didn't know whether I was going to lose control of my muscles and my bowels or my plumbing system."*

Uncertainty Related to Anticipated Pain of Needle: [1HMHB,3LMHB,4LMLB]

LMLB: *"I thought gee that's a long looking needle, that's a big thing. I hate needles. I'm not afraid of it but it's very hard for me to keep quiet if I see somebody coming with a needle…I know that somebody comes and hurts me."*

Subjects sometimes related their fears of pain to past experiences of pain.

LMHB *"I've never been fond of needles…When I joined the Navy I had a penicillin bust off in my butt and it took them about an hour to get the damn thing out cause it just about stuck right in the bone hey, so they were kind of, kind of rough but ah, that's maybe why. And I've thought about that every time…I can't see it, I, oh God not another one, you know, maybe it's in the back of my mind."*

Uncertainty Related to Anticipated Pain of Catheter: [1HMHB,2LMHB,4LMLB]

LMLB: *"It wasn't as painful, sticking the catheter in as, as I anticipated it to*

be...it's just you know sticking, sticking wires into me and that's all...I was just wondering whether, you know, whether you could feel it or not."

Uncertainty Related to Actual Pain:

[3HMHB,1HMLB,2LMHB,1LMLB]

HMHB: *"That was pain. I can't think of anything else, so concentrating on that and I'm sure that creates tension."*

LMHB: *"When the first needle went in, that's when things come up a bit, you know, how far is the pain going to be induced and so on."*

In analyzing appraisals of threat one main theme emerged, that of uncertainty. Differences between groups based on coping style were not evident; uncertainty was present in all four groups.

Uncertainty as defined by Lazarus is a person's confusion about the meaning of a situation, such as when an event will happen or exactly what will happen (Lazarus & Folkman, 1984). It is distinguished from ambiguity or lack of situational clarity, that is, unclear or insufficient information necessary for appraisal. There can be ambiguity in the situation, yet one can feel confident about what to do. Similarly, information can be unambiguous yet a person can experience uncertainty. For example, subjects knew that the dye would feel warm and would only last for a short time yet for some uncertainty existed about how long it would last, or if they would experience a heart attack during the dye. According to Lazarus, the greater the ambiguity of a situation, the more influence person factors have in interpreting the situation.

The association between monitoring and uncertainty is in agreement with findings of Miller et al. (1988) and van Zuuren & Wolfs (1991). In an analysis of

MBSS scores using a 5-point Likert scale and situational characteristics of the four situations in the MBSS, monitoring scores were significantly related to appraisal of the degree of threat and unpredictability. Miller (1987) found that when faced with a prospect of shock in a laboratory situation, for all subjects the main motivation for listening for the information and tone was to reduce uncertainty. It may be that one reason for extensive monitoring in the CC was the high level of uncertainty associated with the procedure in spite of the degree of information received by all subjects.

Chi-Square Results

Using Chi Square no significant differences were found between coping style and monitoring and distraction responses using each of the monitoring and blunting subscales (see Tables 6 & 7).

Summary of Results

All 27 subjects monitored at least once during the CC; 24 monitored across at least three PP's during the CC. Five subjects used distraction one or more times; distraction was always used in combination with monitoring. Twenty one out of 27 subjects used coping strategies other than monitoring or distraction.

Threat appraisals, reported by 25 out of 27 subjects, were related to uncertainty, either general uncertainty or related to a specific situation.

Using Chi Square no significant differences were found between coping style and coping strategies used with each of the monitoring and blunting subscales.

TABLE 6

Chi-Square Results for Coping Style and Coping Strategies used During CC

Using Monitoring Subscale

Comparison of High Monitor vs Low Monitor with Monitoring With Distraction vs Monitoring With or Without "Other"

Procedural Point	N	Chi^2	p
PP#1	20	0.39	>0.05
PP#2	21	1.10	>0.05
PP#3	22	2.20	>0.05
PP#4	25	0.69	>0.05
Total	27	0.05	>0.05

Comparison of High Monitor vs Low Monitor with Monitoring Only vs Other or Distraction With or Without Monitoring

Procedural Point	N	Chi^2	p
PP#1	23	2.56	>0.05
PP#2	25	1.07	>0.05
PP#3	23	1.05	>0.05
PP#4	25	.45	>0.05
Total	27	1.49	>0.05

TABLE 7

Chi-Square Results for Coping Style and Coping Strategies used During CC

Using Blunting Subscale

Comparison of High Blunter vs Low Blunter with Monitoring With Distraction vs Monitoring With or Without "Other"

Procedural Point	N	Chi^2	p
PP#1	19	0.02	>0.05
PP#2	21	0.05	>0.05
PP#3	22	0.08	>0.05
PP#4	25	0.8	>0.05
Total	27	1.48	>0.05

Comparison of High Blunters vs Low Blunters with Monitoring Only vs Other or Distraction With or Without Monitoring

Procedural Point	N	Chi^2	p
PP#1	24	0	>0.05
PP#2	25	0.05	>0.05
PP#3	23	0.88	>0.05
PP#4	25	1.86	>0.05
Total	27	0.60	>0.05

Contextual Factors of CC in Relation to Miller's Hypothesis

Miller's Monitoring and Blunting hypothesis is contingent upon the situational factors of predictability, controllability, and intensity that interact with coping style to affect the choice of coping strategies in a threatening situation. These three factors will be examined as to how they affected the coping process of individuals undergoing CC and how they affect interpretation of the support for construct validity of the MBSS scores. Although they are classified as situational factors by Miller, they are examined in the context of how they are perceived by the individuals in this study.

Predictability

Miller defines predictability as knowing something about an event. She hypothesizes that in uncontrollable situations monitors should consistently prefer to seek information; blunters should consistently prefer to avoid threat relevant information. In this study, however, subjects from all groups expressed a preference for information; differences between groups were not evident. The following comments illustrate this point with comments chosen from the three groups which according to Miller's hypothesis using either subscale should prefer to avoid information.

LMHB: *"Just let me know when they were going to do something. No I'd just as soon know what's happening you know-it's me it's happening to so..."*

"She explained as she was going along there and that seems to help a lot--kind of tells you what they're doing. They explain it and then the thing happens in exactly the way that they say it so that's what gives you confidence."

"I wasn't any more excited cause I knew what he was doing-he said what he

was going to do so it didn't excite me or anything."

LMLB: *"I like to know it all."*

"I am of a curious nature."

HMHB: *"I'm the type of person who wants to know everything there is to know about the procedure."*

"Knowing what's happening, what's going to happen is the secret behind it all."

These examples suggest that the Miller scale does not discriminate informational preference between monitors and blunters and what statements we were able to obtain also were not able to discriminate.

In this study subjects were given various kinds of information prior to and during the CC and these affected their appraisal of threat and choice of coping strategy during the CC.

All subjects received a procedural-sensory video in which a subject was followed through the CC. The video involved a same gender person experiencing the same events as the subject was about to undergo. The film provided both procedural information about the CC as well as sensory information about the sensations the individual would experience during the CC.

What effect did the video have on the subject's appraisals of threat and on coping strategies? Although subject's evaluation of the video was not specifically asked for in the study, fifteen subjects made some comment about the video and its effect can be grouped into three categories: increased anxiety, attenuation of the threat and reduced uncertainty. Two subjects commented that they felt more anxious immediately following viewing of the video.

HMHB: *"Then watching that film last night cause I didn't have a clue what it was all about...well it kind of frightened me up a little bit."*

Thirteen subjects, including those from all four groups commented on the positive effects of the video.

Attenuation of threat

For some subjects seeing the film attenuated the negative aspects of the procedure.

HMHB: *"I really felt quite relaxed because I understood what was happening and because I watched a little and because I saw the video. You think the worst rather than the best and this showed that it wasn't. It's just another test...The only thing that did it (keeping my stress down) to be honest with you was the video. And if I had read about it, it wouldn't have helped as much because I don't get the same thing. Visually, the visual thing did more for me personally."*

LMHB: *"Well I knew what was happening like I say I seen it in the movie. It didn't look very serious."*

HMHB: *"If I hadn't seen the tape or talked to people that's had this, it would have been different, I'd have been likely scared."*

Reduced Uncertainty

Watching the video provided a road map for subjects during the CC. They followed what was happening and when something didn't go as expected, their uncertainty increased.

LMLB: *"On account of seeing the film, I knew she, they'd said that it had to be cool."* (referring to the groin wash)

LMHB: *"Well I knew something was wrong when I started to go under. I mean the*

videos didn't say nothing about that at all." (This subject had a cardiac arrest during the CC and was successfully resuscitated.)

LMLB: *"It was quite familiar after watching the video."*

LMHB: *"The hot shot. What a rush...The video said warm. This was HOT."*

LMLB: *"Seeing the video took quite a bit of the sting out of it: it went exactly as explained."*

HMLB: *"The video really helped. Now I know."*

One subject described himself as someone who would like to know everything that is going on.

LMHB: *"the unexpected is always scary, it's not knowing if it's going to backfire, the video helped."*

In addition to the video preparation, before and during a CC subjects received many other kinds of information which must be given for ethical reasons. These included: (a) an explanation of the procedure by a doctor and enumeration of the possible risks of the procedure; (b) instruction on breathing during the procedure and the sensory effects of the dye (it will feel warm and will feel like you wet the bed) and reassurance that the feeling will not last long; (c) a warning before new procedures such as the groin wash (it will feel cold), the needle, and the insertion of the catheter (you will feel some pressure). Subject comments from all groups generally revealed a desire for information:

LMHB: *"She explained as she was going along there and that seems to help a lot you know. Kind of tells you what they're doing. What seems to me like you know, they explain it and then the thing happens in exactly the way that they say it so, you know that's what gives you confidence."*

HMHB: *"Needle never bothered me because I knew he was going to do it."*
LMHB: *"I wasn't any more excited cause I knew what he was doing. He said what he was going to do so didn't excite me or anything."*

In summary, prior to and during a CC, subjects are given information relevant to the CC. Subjects from all groups expressed a preference for information; differences between groups were not evident. Information given to subjects about the nature and probability of risk and the instructions and warnings given during the procedure may not have supported distraction strategies.

The video and the other information given to subjects generally seemed to attenuate the threat and reduce uncertainty. Maybe the information reduced uncertainty to a degree that increased a person's perception of control. Maybe critical aspects of information that influence coping strategies are not only the amount of information given but also the kind and method of transmitting the information to subjects.

Intensity

Miller views intensity as including duration, imminence, and probability of a threat. The CC is long (approximately one to three hours), physically invasive, and the risks of serious complications are present. Because of the intensity of the event, some subjects described the difficulty of using distraction strategies. In this example the subject explicitly stated she was using prayer as a distraction.
LMLB: *"That pressure was getting a little bit heavier than what my prayer was…and on account of that pressing I automatically cut off my concentration on the prayer and went to the pressure…it just seemed like my prayer was just cut off and there was too much pressure there and then all of a sudden there was none."*

The CC is a rapidly changing procedure with changing cues about what is happening. The duration of the CC and of each event during the CC is unknown. Often the subject does not have time to evaluate the threat before it is over. For example:

LMLB: *"I think that, that was the kind of feeling that what's going to happen next you know and pretty, it was just that split second that hits you and then it all releases...it was so speedy that there wasn't time to, to give it all that much thought."*

Clearly the nature of the CC--the duration, the physical invasiveness, the frequent subject-staff interaction, and the rapidly changing events--do not support distraction.

Controllability

The situational factor of control is a critical feature of Miller's blunting and monitoring hypothesis. It is unclear, however, how Miller defines control in her hypothesis as she refers both to instrumental control (Miller, 1980), that is, actually being able to do something about a situation, and to the individual's perception that he or she can do something or has the potential to do something to change the situation (Miller, 1989b; Miller, Combs, & Stoddard, 1989). She also includes perceived control as a variant of instrumental control (Miller, 1979a). Although Miller claims to use uncontrollable situations in the MBSS, findings from a study by van Zuuren & Wolfs (1991) do not necessarily support this claim. Subjects were asked to rate the MBSS situations on the degree of controllability, predictability, threat, duration, imaginability, and ability to obtain information. Situations were scored differently on all situational characteristics.

Miller refers to uncontrollable events supporting distraction better than controllable events because controlling directs attention towards the aversive situation (Miller, 1981). In laboratory situations the object of control is usually a simple and clear aversive stimulus but in real situations the object of control is usually complex, often ambiguous, and often pertains to both situation and person factors (Lazarus & Folkman, 1984). The following example illustrates this complexity: *"Well I was trying to control the dye, control it in my mind what it was doing. Control my body at the same time, like trying not to let my body to go into a shock. Mind over matter that the body would control or defend itself by its own defenses...like it's like a white flash inside your body, your mind or your head I should say and you have to control it so it doesn't get out of whack...if I couldn't, if my body couldn't control then somebody else would have to."*

During a CC an individual has little instrumental control; however, one cannot assume that subjects perceive the situation to be uncontrollable as illustrated by the following comment: *"I was absolutely under control so I had no problems there."* Control is a complex issue. One can have control over one aspect of a situation but not another. For example, *"It's more a psychological idea that somebody does something to you and you can't do anything against it. I think what's where the main problem comes from...or you should not do anything...I have to control myself and tell myself that I should sit nice and be quiet and calm and then it's okay."*

Summary of Results

The factors of predictability, intensity, and controllability were examined in the context of the CC setting. Findings are summarized as follows:

1. Subjects from all four coping style groups expressed a preference for information; no differences between groups were obvious. Information given to subjects generally either reduced uncertainty or lessened the threat.
2. The lengthy duration, physical invasiveness, imminence, risk of serious complications and rapidly changing events were all characteristics of the CC which may have affected the use of coping strategies.
3. Subject comments on control illustrated the complexity and variability of their perception of control during the CC. Although subjects had little instrumental control during the CC, the perception of control over person and situation factors differed.
4. Situational factors characteristic of a CC which do not support distraction include: intensity, a rapidly changing situation, information given to subjects about the nature and probability of risk, instructions given during the procedure, imminence of the event and the nature of the CC.

The next chapter will address how these contextual factors effect interpretation of the construct validity of the MBSS scores.

CHAPTER V

IMPLICATIONS: THEORETICAL, EMPIRICAL, AND CLINICAL

To assess the degree of support for construct validity the findings from this study must be interpreted in the context of Miller's Monitoring and Blunting hypothesis. The two sources of evidence used in assessing construct validity are: (a) the relationship of the test score to the actual coping strategies used in the CC, and (b) the contextual factors in the CC setting that are relevant to Miller's hypothesis.

Lack of support for construct validity can be due to several factors. These include: lack of internal validity of the study, a tool that lacks representativeness or relevance to the domain of reference, incongruence of tool and theory, lack of clarity and precision, and lack of ability of the construct to be differentiated in a particular applied setting (Cook & Campbell, 1979, Messick, 1989). Each of these areas will be discussed in the assessment of construct validity and findings from this study will be used to support the conclusions. Problems with the theory and clinical implications for nursing care will be discussed.

Study Limitations

Recognition of Limitations of Data Collection

Using Guba and Lincoln's classification for meeting tests of rigor (1983) in analysis of qualitative data, the following factors in data collection affecting internal validity or credibility include: distortions arising from the researcher's involvement with subjects, for example, providing distraction by talking to a subject; distortions arising from the researcher's presence, for example, *"I thought just at that moment your voice, when you spoke, your voice was just part of reassuring me"* ; and

possible distortions arising from bias, for example, prior knowledge of the coping style could have influenced researcher questions. The video, by attenuating the threat and increasing uncertainty in some subjects, could have reduced the necessity to distract by increasing predictability and possibly increasing a perception of control. However, the reality of research in a clinical setting is that a certain amount of information must be given to subjects and one cannot control for information by withholding information.

Method of Obtaining Coping Responses

Limitations may include the method of obtaining coping responses. The interview was constrained by extraneous factors: time, subject fatigue and condition, and other people.

As the six areas had to be covered in about 20 minutes, time was an important factor that acted to limit the depth of the interview. Also, the interviewers had little control over the length of interview as when the subject was ready to return to the ward, the porter was called. Knowing the extent of material that had to be covered in 20 minutes may have been a factor in not exploring a subject's responses in depth.

The subjects were often tired and sometimes in physical discomfort either from their incision site or from lying on their back for so long, had a dry mouth, or were just physically and emotionally tired, especially if they had waited many hours for the test. Most were relieved it was over, however, and talking about it at that time may have been therapeutic.

The presence of a third person at the interview was another factor that may have limited the quality of the interview. The interviewees may have been less

willing to expose their fears or to comment on how interactions and responses of the staff affected them. Other limitations to an in-depth interview were the interruptions and activities of the area; speaking on the intercom and other people passing by detracted from the privacy of the interview.

Because responses were obtained following the procedure, subjects may have had difficulty remembering the coping strategies they used or they may not have wanted to reveal the coping response they used. Because coping is a complex process possibly involving the use of more than one strategy at any given time, subjects may have only revealed one of their strategies. They could be unaware that certain thoughts were strategies, for example cognitive reappraisal where one reduces the threat by changing the meaning of a situation. In spite of these drawbacks to this method of measurement, the strength is that self-report is as close to what actually happened that we can practically measure. Also, although the research assistants were given guidance in interviewing skills, ability to elicit information from subjects varied between assistants and generally improved with experience.

Lack of Precision in Measurement of Coping Strategies

Lack of precision in measurement of coping strategies due to lack of clarity of terms required the researcher's interpretation of the terms. For example, Miller may not have intended monitoring to include appraisal, but because of lack of clarity, interpretation is open to the individual researcher and measurement error due to interpretation of construct meaning may occur.

Effect size was increased by using subjects with extreme scores. The power of the study to detect a medium effect (.5) was approximately .7 (Cohen, 1988).

Although the sample size was not enough to detect a small effect, one must ask what effect is clinically significant for usefulness in a clinical setting.

Steps taken to increase internal validity of study

Because data were already collected, recognition of the possible threats to credibility while analyzing the data was essential. Steps that were taken to limit further bias included the exclusion of responses to leading questions and to those suggested by the researcher or staff. To eliminate bias based on knowledge of the MBSS scores by the rater, interviews were numbered. A random number of interviews were rated by a second interviewer to increase reliability of measurement.

The MBSS: Representativeness and Relevance in the CC Setting

In test usage it is important to evaluate the relevance and representativeness of the test for applicability to a different applied setting especially when it is different from the one for which the test was originally designed and tested (Messick, 1989). An important requisite in relevance and representativeness is clarity of the domain of reference. Because of a lack of clarity in the construct and lack of description of the boundaries and dimensions of the domain, it is difficult to assess the interpretation of test scores in the CC setting.

Content Representativeness

One area of the MBSS is under represented from an empirical perspective in this study. In this study 20 out of 27 subjects used coping responses other than monitoring or distraction. Some of these coping strategies fit into Miller's concept of blunting strategies. Therefore, the MBSS, because it measures only monitoring and distraction strategies, does not represent the domain of coping responses which

individuals actually use in a CC situation.

Content Relevance

The MBSS was designed to measure monitoring and distraction and was first tested in a laboratory situation in which the subjects were given two options, to monitor or to distract. However, the test is intended to be used in clinical situations and has been tested in various clinical situations. In testing a tool in a new setting one must assess if the prediction can be generalized beyond the testing conditions that were originally used to test the hypothesized relationship (Cook and Campbell, 1979). This poses a problem because, while in the laboratory setting events are labeled predictable or unpredictable, in a clinical situation events are complex and contain both predictable and unpredictable components. An individual might respond to this complex of events in a manner that is not easily classified.

If such is the case then one must ask under what set of conditions can one detect a difference in personal dispositions. Miller anticipated this question and suggests that monitoring and blunting differences should become evident in high threat situations of an uncontrollable nature and that arousal differences should be most evident as the process of coping enfolds (Miller, 1989a, 1989b). But in this study no differences in coping strategies were evident based on MBSS scores even though the CC is a physically invasive procedure with life-threatening risks. It may be that a tool that only measures monitoring and distraction is not relevant for this setting and that if individuals do have different coping styles, they are not evident in the CC setting because of situational factors.

Incongruence of tool and theory

The theory hypothesizes that people either monitor or blunt during a threatening situation and the initial purpose of the MBSS was to categorize individuals into monitors or blunters. However, the monitoring and blunting subscales are uncorrelated in the larger study, thus resulting in four groups of subjects: HM/HB, HM/LB, LM/HB, and LM/LB. This is consistent with recent studies using the MBSS (Miller, 1987; Miller et al., 1988; van Zuuren & Wolfs, 1991). The theory, however, does not address the HM/HB or LM/LB groups, and does not predict what coping strategies these subjects will use. The problem is that for each group using either of the subscales, approximately half of the group is confounded by an incongruent group. For example, the theory predicts that high monitors, using the monitoring subscale, should prefer information and not avoid information. However, half of the group will be high blunters and will prefer to avoid information by distraction. Therefore, the prediction becomes dissonant.

Miller predicts that "the ability to successfully distract oneself from danger signals should be subject to wide individual differences....there should be a consistent minority of subjects choosing unpredictability under conditions apparently not favoring distraction who will show lower arousal and a consistent minority choosing predictability...under conditions supporting distraction" (Miller, 1981, p. 220).

What is not clear is whether blunters and monitors represent the two minorities described above and, if so, why the tool divides the samples into two groups (or four if both subscales are used.) From Miller's writings, one can infer only that the groups include not only the minority groups but also the majority that

supposedly should choose to monitor or blunt based on situational factors and not coping style.

In this study most subjects used a combination of coping strategies during the CC. This suggests, at least for the majority of the sample, the use of coping strategies is flexible. This is consistent with the findings of Cohen and Lazarus (1973); in studying avoidant and vigilant modes of coping in surgical subjects 61% of subjects fell into a middle group, who gave evidence of both avoidant and vigilant modes of coping. In the larger study, 50% of subjects fall into either a HM/HB group or LM/LB group based on MBSS scores. If there is a minority of individuals that consistently use either monitoring or blunting strategies, the tool should be modified to be more discriminating. Maybe a cut off of each subscale would more accurately represent the concept of two minority groups and be more consistent with the theory.

Lack of Clarity and Precision

Lack of clarity and precision are major threats to construct validity (Cook & Campbell, 1979). Both the construct, coping style, and Miller's hypothesis, lack precision and clarity, thus it is difficult to test and to interpret the results. For example, one could argue that this study does not support the hypothesis. However, the theory is imprecise enough that one could argue equally as well that it does support the hypothesis; that is, when certain situational factors are present, it is difficult or impossible to distract and the majority of individuals will monitor.

If predictions are made, a theory, particularly one which is intended for clinical use, must be testable; predictions "must not be so vague that any conceivable observation will confirm them" (Weed, 1988, p. 22). The theory covers

all possibilities. In the present study, one must ask what is actually being predicted by the theory. Unfortunately. if the results can be used to justify both support and rejection of the hypothesis, we can only conclude that the theory lacks discrimination and Weed's requirement can not be met.

Lack of Construct to be Differentiated in CC Setting

It might be argued that the CC setting cannot differentiate coping styles, that the CC setting is an inappropriate one in which to test the theory because of it's high intensity and rapidly changing nature. But what situation other than a laboratory would differentiate coping styles?

In assessing the transportability of findings from one context to another it is important to identify those variables that differ between situations and the effects they have on the events in the different contexts (Messick, 1989). In the laboratory situation the conditions under which the theory is tested often are controlled and offer a sense of choice, i.e. the situation is either controllable or not controllable, it is predictable or not predictable, it is of defined intensity; however, in the clinical situation such as a CC, the conditions are often poorly controlled, are unpredictable, and of varying intensity. In laboratory research an assumption is often made of the processes that people actually use in coping with the threat (Lazarus & Launier, 1978). The lab situation is time limited in contrast to the lengthy and dynamic CC situation where appraisals and coping responses are constantly changing. In the lab the possible coping responses are limited in number and kind, whereas a large range of responses occurred in the CC. In Miller's laboratory study and in this study the situational variables of controllability, predictability and intensity were not measured. However, the findings suggest that

the appraisal of these factors varied greatly among subjects.

The difficulty in transporting a theory from a laboratory to a complex situation where choice of coping strategy, controllability, predictability, and intensity are not dichotomous variables, becomes apparent.

Problems with Miller's Hypothesis

According to Miller, coping style and situational factors interact to determine coping strategies used in a threatening situation. The degree of stress varies as a function of the fit between dispositional style and situational constraint (Miller, 1989a). Although Miller defines coping as a process, her model is based on a structural interactional approach which does not allow for reciprocal relations between variables. In contrast with the interactional approach of Miller is the transactional approach of Lazarus which reflects the process and relational attributes of his coping model where the variables are constantly influencing one another in reciprocal causation (Lazarus, 1991).

Miller does not allow for the appraisal of the person-situation encounter and this may be a key component missing in the hypothesis. Miller describes controllability, predictability and intensity as properties of situations. She alludes to a person's perception of situational cues by distinguishing between the physical and psychological presence of physical stimuli but does not address the fact that the meaning of the stimuli for an individual is transformed by a process of appraisal. Because of differences in beliefs and values, a situation that may have a certain degree of uncontrollability may be appraised by different individuals as having varying degrees of controllability. For example the following two excerpts illustrate different perceptions of control for two subjects undergoing CC:

LMLB: *"I was absolutely under control so I had no problems there."* and,

HMLB: *"I got kind of resigned to what's going on so it's going to happen. I can't change it."*

Similarly, Miller ascribes the quality of predictability to the situation, an event is described as predictable or unpredictable. She also uses the term predictability as knowledge of an event but again does not discuss distinguish between having knowledge about an event and appraisal of the encounter. In contrast Lazarus distinguishes between knowledge and appraisal. Knowledge refers to an understanding of the way things are and work, whereas appraisal is a continuing evaluation of the significance of what is happening for one's personal well-being (Lazarus, 1991). For example, the following two subjects had similar knowledge about the probability of risk but their evaluation of the personal significance of that knowledge differed.

HMHB: *"I really thought maybe I was going to go into a stroke because I thought maybe I might have a clot that would go in, that I'd go into a stroke or heart failure. These were all warnings that I was given ahead of time not warnings, they were possibilities. Far fetched possibilities like one in I don't know how many and I thought maybe I'm the one."* and,

HMHB: *"I never ever thought that there was going to be any problems although I was quite aware that there could have been problems. I was aware that those catheters in your heart could trigger a heart attack but I really wasn't concerned about that."*

Appraisal, although not explicitly dealt with by Miller, is indirectly alluded to in the terms she uses interchangeably with coping style, informational processing

style and cognitive informational style. She also refers to monitoring and blunting as information-processing variables (Miller & Birnbaum, 1988). Maybe coping style refers more to the way in which the situation is appraised and that informational preference varies because of the way the situation is appraised--maybe the monitor attributes more controllability to a person-situation relationship than does a blunter. Maybe the point when one evaluates that a situation is uncontrollable is a factor in influencing a person's use of strategies other than monitoring.

Clinical Implications for Nursing Care

For a tool to be used on patients to assess coping style, and for action to be based on their score, the tool must have an acceptable degree of construct validity. This study did not support the construct validity of the MBSS in the CC setting.

It may be that in a clinical situation such as a CC in which it is difficult to use distraction techniques and where uncertainty is a common threat, it is important to find out what kind of information patients prefer and what kind reduces uncertainty. Many subjects in this study, knowing some would receive a video and some a booklet, expressed a desire for the video. Asking patients how much and what kind of information they would prefer is a simple and effective way of individualizing their care. Being aware of patients' differences in informational preference is important. Providing a choice of kind and method of delivery of information would again individualize care. Only further research will allow us to understand better the complexity of the coping process and determine if consistency in the use of coping strategies is a valid construct.

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APPENDIX A

MILLER BEHAVIORAL STYLE SCALE

GENERAL INSTRUCTIONS

The Miller Behavioral Style Scale includes a series of 4 threatening situations each of which is followed by 8 statements of activities that you might undertake if you found yourself in the situation. It is anticipated that it would require about 10 minutes to complete the Miller Behavioral Style Scale following 4 steps including:

i) read the description of the situation and vividly try to imagine that you are actually in that situation

ii) read each of the statements describing activities that might be undertaken by individuals facing the situation

iii) place a check beside the statement(s) that describe action(s) that you would likely undertake if you were actually facing the situation

iv) repeat steps i) to iv) for each of the remaining 3 imaginary situations

MILLER BEHAVIORAL STYLE SCALE

1. "Vividly imagine that you are afraid of the dentist and have to get some dental work done."

Which of the following would you do?

Check all of the statements that might apply to you.

_____ I would ask the dentist exactly what he was going to do.

_____ I would take a tranquilizer or have a drink before going.

_____ I would try to think about pleasant memories.

_____ I would want the dentist to tell me when I would feel pain.

_____ I would try to sleep.

_____ I would watch all of the dentist's movements and listen for the sound of his drill.

_____ I would watch the flow of water from my mouth to see if it contained blood.

_____ I would do mental puzzles in my mind.

MILLER BEHAVIORAL STYLE SCALE (continued)

2. "Vividly imagine that you are being held hostage by a group of armed terrorists in a public building."

Which of the following would you do?

Check all of the statements that might apply to you.

_____ I would sit by myself and have as many daydreams and fantasies as I could.

_____ I would stay alert and try to keep myself from falling asleep.

_____ I would exchange life stories with other hostages.

_____ If there were a radio present, I would stay near it and listen to the bulletins about what the police are doing.

_____ I would watch every movement of my captors and keep an eye on their weapons.

_____ I would try to sleep as much as possible.

_____ I would think about how nice it is going to be when I get home.

_____ I would make sure I knew where any possible exits were.

MILLER BEHAVIORAL STYLE SCALE (continued)

3. "Vividly imagine that, due to a large drop in sales, it is rumored that several people in your department will be laid off. Your supervisor has turned in an evaluation of your work for the past year. The decision about layoffs has been made and will be announced in several days.

Which of the following would you do?

Check all of the statements that might apply to you.

_____ I would talk to my fellow workers to see if they knew anything about what the supervisor's evaluation of me said.

_____ I would review the list of my duties of my present job and try to figure out if I had fulfilled them all.

_____ I would go to the movies to take my mind off of things.

_____ I would try to remember any argument or disagreement I might have had with my supervisor that might have lowered his opinion of me.

_____ I would push all thoughts of being laid off out of my mind.

_____ I would tell my spouse that I would rather not discuss my chances of being laid off.

_____ I would try to think which employee in my department the supervisor might have thought had done the worst job.

_____ I would continue doing my work as if nothing special was happening.

MILLER BEHAVIORAL STYLE SCALE (continued)

4. "Vividly imagine that you are on an airplane, 30 minutes from your destination, when the plane unexpectedly goes into a deep dive and then suddenly levels off. After a short time, the pilot announces that nothing is wrong, although the rest of the ride may be rough. You, however, are not convinced that all is well."

Which of the following would you do?

Check all of the statements that might apply to you.

_____ I would carefully read then information provided about safety features in the airplane and try to make sure I knew where the emergency exits were.

_____ I would make small-talk with the passenger beside me.

_____ I would watch the end of the in-flight movie, even if I had seen it before.

_____ I would call for the stewardess and ask her exactly what the problem was.

_____ I would order a drink or tranquilizer from the stewardess.

_____ I would listen carefully to the engines for unusual sounds and would watch the crew to see if their behavior was out of the ordinary.

_____ I would talk to the person beside me about what might be wrong.

_____ I would settle down and read a book or magazine or write a letter.

APPENDIX B

UNIVERSITY OF ALBERTA HOSPITALS
EDMONTON, ALBERTA

Informed Consent for the Research Study Titled:

PREPARATION OF ADULT PATIENTS FOR CARDIAC CATHETERIZATION

RESEARCHERS WHO ARE DOING THIS STUDY ARE:

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PURPOSE OF THE STUDY

Patients who are hospitalized for cardiac catheterization usually experience varying degrees of anxiety while awaiting their catheterization. In order to minimize or remove such fears, nursing staff provide cardiac catheterization patients with information about what to expect before, during and after their catheterization procedure. Unfortunately, it is not known which way of providing such information works best.

We will be studying the effectiveness of three different methods of providing cardiac catheterization patients with information about the catheterization procedure. We will be determining which method works best by taking into account how each catheterization patient deals with information about stressful events. Put in more scientific language, we will be determining which method is best by assessing each patient's "cognitive coping style".

VOLUNTARY PARTICIPATION

We would like you to assist us by participating in the study. We also want you to know that you do not have to be in this study if you don't want to participate in it. If you do decide to participate in the study you can drop out at any time just by telling your nurse or one of the researchers that you wish to withdraw. No one will hold it against you if you decide to drop out. Your care during your hospital stay won't change because you are or aren't in this study.

We wish you to know, too, that your doctor knows about our study and has given his permission for you to participate in it if you wish.

STUDY PROCEDURE

The three patient information methods to be evaluated in this study are:

(1) Method "A" is the information method currently used on the unit. It involves having the patient read a 35 page booklet which provides easy to read step-by-step information on the cardiac catheterization procedure.

(2) Method "B" has been developed by the researchers. It involves having the patient view a short videotape which provides step-by-step information about the catheterization procedure while showing a male (or female) patient before, during and after his/her catheterization procedure in this hospital.

(3) Method "C" has also been developed by the researchers. This method is the same as Method "B" except that this videotape also includes information about the sensations patients commonly experience before, during and after their catheterization procedure.

Patients who participate in this study will be randomly assigned (like a lottery) to receive information about cardiac catheterization by means of <u>one</u> of these three methods.

This study will be conducted before, during and after the patient's cardiac catheterization procedure. If you agree to participate in this study you will be one of 150 patients who fulfill the nine steps described on the next two pages. If you decide <u>not</u> to participate in the study you will not fulfill the nine steps described on the next two pages, but you will receive information about cardiac catheterization by means of the information booklet (Method A).

The afternoon or evening BEFORE your catheterization you would:

Step 1. complete three questionnaires designed to measure your anxiety level and cognitive coping style and have your pulse and blood pressure taken

Step 2. read the patient information booklet (Method A) or observe one of the 20 minute information videotapes (Method B or C)

Step 3. complete one questionnaire designed to measure your anxiety level and have your pulse and blood pressure taken

The DAY of your catheterization before leaving your hospital room for your catheterization you would :

Step 4. complete one questionnaire designed to measure you anxiety level and have your pulse and blood pressure taken

DURING your catheterization you would :

Step 5. when asked by the nurse-researcher, tell her what your anxiety number is using a 10 point scale where the number 0 represents no anxiety and the number 10 represents the most anxiety you have ever experienced. (Note: the nurse-researcher will ask for your anxiety number at 6 different times during your catheterization procedure)

Step 6. tell the nurse-researcher your anxiety number if you notice it increasing (going up)

Step 7. tell the nurse-researcher your anxiety number if you notice it decreasing (going down).

Please note: every time the nurse-researcher records your anxiety number she will take your pulse and blood pressure.

Immediately FOLLOWING your catheterization you would :

Step 8. participate in a 20-30 minute tape recorded interview conducted by the nurse-researcher who was with you before and during your catheterization procedure (this interview will focus on what you experienced during your catheterization and what you were thinking when your numbers went up, down, and/or remained the same).

The day of your catheterization while RECOVERING from your catheterization in your hospital room you would :

Step 9. complete a questionnaire designed to measure your anxiety level and have your pulse and blood pressure taken.

CONFIDENTIALITY

If you participate in this study your name and what you say and do will be kept confidential. Your questionnaires and records will not be marked with your name but only with a number to preserve your anonymity. The audiotapes from the tape-recorded interview will be erased once the transcript is made and the transcript will be coded with a number. Your doctors and nurses in the hospital will not see or hear about your personal records from this study, unless you, yourself, wish to speak to them about your experiences. If your personal records are used to answer research questions that are different from the ones talked about in this consent, the researchers will get ethical approval according to usual University procedure before beginning such research.

When the results of the study are completed, we plan to publish our results in scientific journals and to present our findings to health care professionals. We want you to know that when we do so we will not identify you in our talks or writing.

A member of our research team will be happy to answer any questions you have now. If you have questions later, you can contact one of the researchers listed on the first page.

PARTICIPANT'S STATEMENT:

I have read this information and give my consent to be involved in the study "Preparation of Adult Patients for Cardiac Catheterization".

_____ _____
signature of patient date

_____ _____
signature of research assistant date

I also give my permission for the researchers to contact me in the future to ask me if I would be willing to be part of another study.
Yes _____ No _____

_____
signature of participant

_____

_____
address